

## **AMENDMENTS TO THE CLAIMS**

1-45 (Cancelled)

46. (Currently Amended) A computerized method for determining the amount of manufacturing parts to produce an article of manufacture having a plurality of structural design variants in accordance with at least one order specifying particular design options ~~for manufacturing an article of manufacture having a plurality of structural design variants~~ comprising the steps of:

defining a net of positions with each position corresponding to a different predefined location on the article of manufacture; and

assigning at least one position variant to each position, each position variant identifying a specific part that may be used at the respective position in accordance with a particular design variant, so that, in a particular article of manufacture, only one of the at least one position variants can be selected for the respective position; and

formulating a code rule for each position variant indicating when the particular variants should be selected in accordance with specified design options; and

each code rule comprises at least one code rule element corresponding to a selectable design option; and

the orders are contained in an order matrix which cross references each order against every  
code rule element; and

defining a plurality of links each between particular pairs of positions, each link corresponding to a physical connection between parts in a pair of locations in the article of manufacture, which pair of locations corresponds to the respective pair of positions[.]; and

calculating the amount of manufacturing parts for the article of manufacture; and

upon receiving the order containing specified design options:

evaluating the code rule for each position variant to select a specific position variant for each position and thereby identify a specific part for use in the location corresponding to the respective position;

providing the specific part associated with each selected position variant in order to assist in  
the manufacture of the article of manufacture using the specific parts in the corresponding locations.



mapping the evaluations of the unique code rules to the corresponding code rules in the position variant definitions in the BOM; and

determining the appropriate position variant ~~definition to select~~ for each position in accordance with the mapped code rule evaluations[.]; and

calculating the amount of manufacturing parts for the article of manufacture; and

upon receiving an order containing specified design options:

evaluating the code rule for each position variant to select a specific position variant for each position and thereby identify a specific part for use in the location corresponding to the respective position;

providing the specific part associated with each selected position variant in order to assist in the manufacture of the article of manufacture using the specific parts in the corresponding locations.

51 - 53. (Cancelled)

54 (Currently Amended) The computerized method of claim ~~51-50~~, wherein each position variant definition has an associated validity period and the step of extracting unique code rules comprises extracting unique code rules only from those position variant definitions which have not expired at a specified start time based on the validity period.







definition further identifying a specific part, and including a code rule indicating when the position variant definition should be selected and thereby when the identified part should be used at the corresponding location;

the memory further including information representing at least one order specifying particular design options which define a particular design variant of the article; wherein each code rule for a particular design variant is a logical statement including one or more unique code rule elements;

the processor being configured to:

(a) extract unique code rules from the BOM and evaluate the code rules for each position variant definition in accordance with the respective design options for each order to identify an appropriate part for use in each location of the corresponding particular design variant of the article; and

(b) produce an output indicating for each order the appropriate parts for use in the corresponding particular design variant of the article;

the particular design variant defined by a specific order corresponding to the article of manufacture using the parts indicated for that specific order;

wherein the processor is configured to evaluate the code rules by:

mapping the evaluations of the unique code rules to the corresponding code rules in the position variant definitions in the BOM; and

determining the appropriate position variant for each position in accordance with the mapped code rule evaluations;

wherein each position variant definition has an associated validity period; and

the processor is configured to extract unique code rules only from those position variant definitions which are not expired at a specified start time in accordance with the associated validity period;

wherein:

the orders are contained in an order matrix stored in memory wherein the sequence of orders in the order matrix indicates a time sequence of manufacture of said orders;

the processor being further configured to:

determine, in accordance with the specified start time, a build time when the article of manufacture associated with each particular order will be manufactured; and

map the evaluations of the unique code rules to the corresponding code rules in the position variant definitions only for those particular orders which have a build time within the validity period of the respective position variants.

62. (Currently Amended) A programmable medium containing a computer program, for determining the amount of manufacturing parts to produce an article of manufacture having a plurality of structural design variants in accordance with at least one order specifying particular design options ~~assisting in the manufacturing of an article of manufacture having a plurality of structural design variants~~, said computer program configured to perform the following steps:

defining a net of positions with each position corresponding to a different predefined location on the article of manufacture;

assigning each position a unique position ID;

assigning at least one position variant to each position, each position variant identifying a specific part that may be used at the location corresponding to the respective position and having a related code rule indicating when the particular position variant should be selected in accordance with specified design options; and

each code rule comprises at least one code rule element corresponding to a selectable design option; and

the orders are contained in an order matrix which cross references each order against every code rule element; and

upon receiving an order containing specified design options:

evaluating the code rules for each position variant to identify an appropriate part for use in each position; wherein the step of evaluating each unique code rule further comprises:

dividing each unique code rule into its discrete code rule elements;

linking each discrete code rule element with order data for the corresponding code rule element in an order matrix which cross references each order against the code rule elements; and









68. (Canceled)